REMARKS

I.   Introduction

In response to the Office Action dated November 22, 2005, claims 2 and 19 have been cancelled, claims 1, 10-18 and 20-28 have been amended, and new claims 29 and 30 have been added. Claims 1, 3-18, and 20-30 are in the application. Re-examination and re-consideration of the application, as amended, is requested.

II.   Allowable Subject Matter

In paragraph [11], the Office Action allows claims 1, 3-13 and 28.

In paragraph [12], the Office Action indicates that the subject matter of claims 22, and 24-27 would be allowable if written in independent form including all of the limitations of the base claim and any intervening claims. The Applicant[s] acknowledge[s] the Office Action's indication of allowed and allowable subject matter, but traverses the rejection of claims 16-21 and 23. Should the rejection of these claims be maintained, the Applicants will make suitable amendments to present the allowable claims in independent form.

III.   Claim Amendments

Applicants' attorney has made amendments to the claims as indicated above. These amendments were made expedite allowance of the application and with a view to pursuing additional subject matter in continuing applications.

IV.   Office Action Objections

In paragraph [1], the Office Action objects to FIGs. 4 and 5 because FIG. 4 it fails to label the MPEG encoders and FIG. 5 fails to label the null packet replacer.

The Applicants thank the Examiner for noting these errors. The Applicants have amended FIGs. 4 and 5. Included herewith are Proposed Drawing Changes.

In paragraph [2], the Office Action objects to FIG. 5 as failing to disclose the multiplexer in the configuration recited in claim 2. The Applicants have canceled claim 2 in favor of a continuing application, rendering this objection moot.

In paragraph [3], the Office Action objects to the claim numbering. The claims have been renumbered as indicated (8-25 to 10-28). The Applicants thank the Examiner for noting this error as well.

In paragraph [4], the Office Action objects to claim 1, indicating "an compressed" should be "a compressed." The Applicants have amended claim 1 accordingly.

V.   Non-Art Rejection

In paragraphs (5)-(6), the Office Action rejected claim 2 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The Applicant has canceled this claim in favor of presenting it in a continuing patent application.

VI.   The Cited References and the Subject Invention

A. The Arazi Reference

U.S. Patent No. 5,966,120, issued October 12, 1999 to Arazi et al. disclose a method and apparatus for combining and distributing data with pre-formatted real-time video. A system for providing efficient constant bit rate distribution of variable bit-rate encoded video programs while facilitating the distribution of encoded video programs, along with Auxiliary Data of a general character, to one or more receivers. At a particular receiver, a customized augmented video program is created by inserting selected portions of the Auxiliary Data into a selected encoded video program. The encoded video portion of the augmented video program can be transmitted, decoded and displayed in real time, while the Auxiliary Data need not be transmitted in real time but can be stored locally at the receiver for real-time presentation at a later time. Real time presentation might include insertion into the video program while non real-time presentation might include insertion into non-video applications separate from the video program.

VII.   Office Action Prior Art Rejections

In paragraphs (7)-(8), the Office Action rejected claim 16 under 35 U.S.C. § 102(b) as being anticipated by Arazi et al., U.S. Patent No. 5,966,120 (Arazi).

Claim 16 has now been amended to recite the features of claim 19, which was rejected as unpatentable over Arazi under 35 U.S.C. § 103(a). As amended, claim 16 recites:

A method of adding auxiliary data D_A to a data stream, comprising the steps of:

accepting a statistically multiplexed data stream having null data; [[and]]

substituting at least a portion of the auxiliary data D_A for the null data in the statistically multiplexed data stream; and

controlling an amount of the null data in the statistically multiplexed data to provide sufficient null data to permit the substitution of at least some of the auxiliary data D_A in the statistically multiplexed data stream.

In rejecting claim 19, the Office Action argued that the following teaches "controlling an amount of the null data for substitution of the auxiliary data."

FIG. 2 illustrates Auxiliary Data Insertion Controller 200 in greater detail. The Primary Video Data Stream is sent to a Fill Packet Detector 210 and a Data Packet Detector 220, which provide active enable outputs upon detection of fill packets and data packets, respectively. The outputs of Fill Packet Detector 210 and Data Packet Detector 220 are sent to the set and reset terminals respectively of SR Flip Flop 230, which provides an inverted output of logical 1 output when the Primary Video Data Stream consists of a data packet and a logical 0 when the Primary Video Data Stream consists of a fill packet. In alternative embodiments of the present invention, those of ordinary skill in the art will recognize that other designs may reverse the polarities of the various signals described above and in the following.

The output of Flip Flop 230 is sent to OR logic 235 together with an output of Comparator 250. As will be described below, the output of Comparator 250 is a logical 1 when the fill packet length is sufficiently long to allow replacement of fill packet data by Auxiliary Data. Thus, initially, before a fill packet is detected, the output of OR logic 235 is a logical 1, which resets the output of Counter 240 to zero, and since 0 is less than N, the assumed size of all packets of auxiliary data, the output of Comparator 250 is a logical 0. Then, when a fill packet is first detected by Fill Packet Detector 210, it will set the SR Flip Flop 230, thereby causing the inverted output of the SR Flip Flop to become a logical 0. Next the output of OR gate 235 will change from logical 1 to logical 0, since both of its inputs are now 0, and this will cancel the reset of Counter 240, thereby enabling it to begin counting. The counter will continue incrementing until one of two conditions occur. The first condition is satisfied if Data Packet Detector 220 detects a next data packet, causing SR Flip Flop 230 to reset, thereby causing OR gate 235 to output a logical 1, thereby causing Counter 240 to reset to 0. The second condition is satisfied if the output of Counter 240 becomes equal to N. This causes Comparator 250 to output a logical 1 to SR Flip Flop 270 to direct Program/Auxiliary Data MUX 280 to replace the fill packet with Auxiliary Data. If the duration of the fill packet is at least N cycles, then at least one Auxiliary Data packet can be inserted into the bit stream (assuming that all Auxiliary Data packets are N cycles in duration). That is, the purpose of the Flip Flop 270 is to measure a fixed time interval of exactly N cycles and to output a replace packet enable signal during this time interval for signaling the Program/Auxiliary Data MUX 280 to select data from the Auxiliary Data Storage 130 (via Buffer 290) instead of the Primary Video Data Stream. (col. 6, line 45 - col. 7, line 25)

The Applicants respectfully disagree. Claim 16 recites more than just "controlling an amount of the null data for substitution of the auxiliary data." It recites *controlling an amount of the null data in the statistically multiplexed data to provide sufficient null data to permit the substitution of at least some of the auxiliary data D_A in the statistically multiplexed data stream.* Arazi does not disclose a statistical

multiplexer, nor does it disclose controlling the amount of null data to permit at least some of the auxiliary data can be substituted for null data.

Arazi teaches substituting auxiliary data only when the presence of null packets permits (hence not permitting real time or non-opportunistic data), but does not teach controlling the availability of those null packets to assure that at least some of the auxiliary data can be substituted (see. col. 8, lines 12-15 and 19-21, and 63-67). Hence, Arazi teaches away from controlling the amount of null data to permit substitution of at least some of the auxiliary data.

One of the reasons for controlling the amount of null data is to permit the use of non-opportunistic data ... a feature that is recited in claim 17. The proffered rationale for modifying Arazi to permit the substitution of non-opportunistic data uses circular reasoning (e.g. ... it would be obvious to modify Arazi to include non-real-time data because it would be obvious to embrace non-real time data).

With respect to both claims 16 and 17, the Applicants also disagree because the controlling of null data to permit substitution of non-opportunistic (or real time) data is not a simple matter, as the operation and function of the cited statistical multiplexer is quite complex, and blindly doing so would compromise the dynamic performance of the system.

Claim 18 recites that the auxiliary data is buffered until there is sufficient null data to permit substitution of at least some of the auxiliary data in the statistically multiplexed data stream. Arazi discloses a buffer, but that buffer is not used the same way. Instead of using the buffer to store data until it can be substituted (as recited in claim 18) Arazi's buffer 290 is used "to ensure that the Auxiliary Data are always available when needed" (col. 7, lines 45-46). Not only is this relevant to the rejection of claim 18, it is also another reflection of Arazi's failure to control the amount of null data and the resulting inability to handle non-opportunistic data, as recited in claims 16 and 17.

VIII.   Dependent Claims

Dependent claims 17-21 and 23 incorporate the limitations of their related independent claims, and are therefore patentable on this basis. In addition, these claims recite novel elements even more remote from the cited references. Accordingly, the Applicant respectfully requests that these claims be allowed as well.
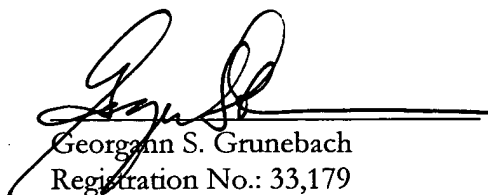
IX.   New Claims

New Claims 29 and 30 are presented for the first time in this Amendment. For the reasons described above, new claims 29 and 30 are patentable over the prior art of record, and the Applicant respectfully requests the allowance of these claims as well.

X.   Conclusion

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

                                        Respectfully submitted,

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IN THE DRAWINGS

Please amend FIGs. 4 and 5 as described in the enclosed proposed drawings.
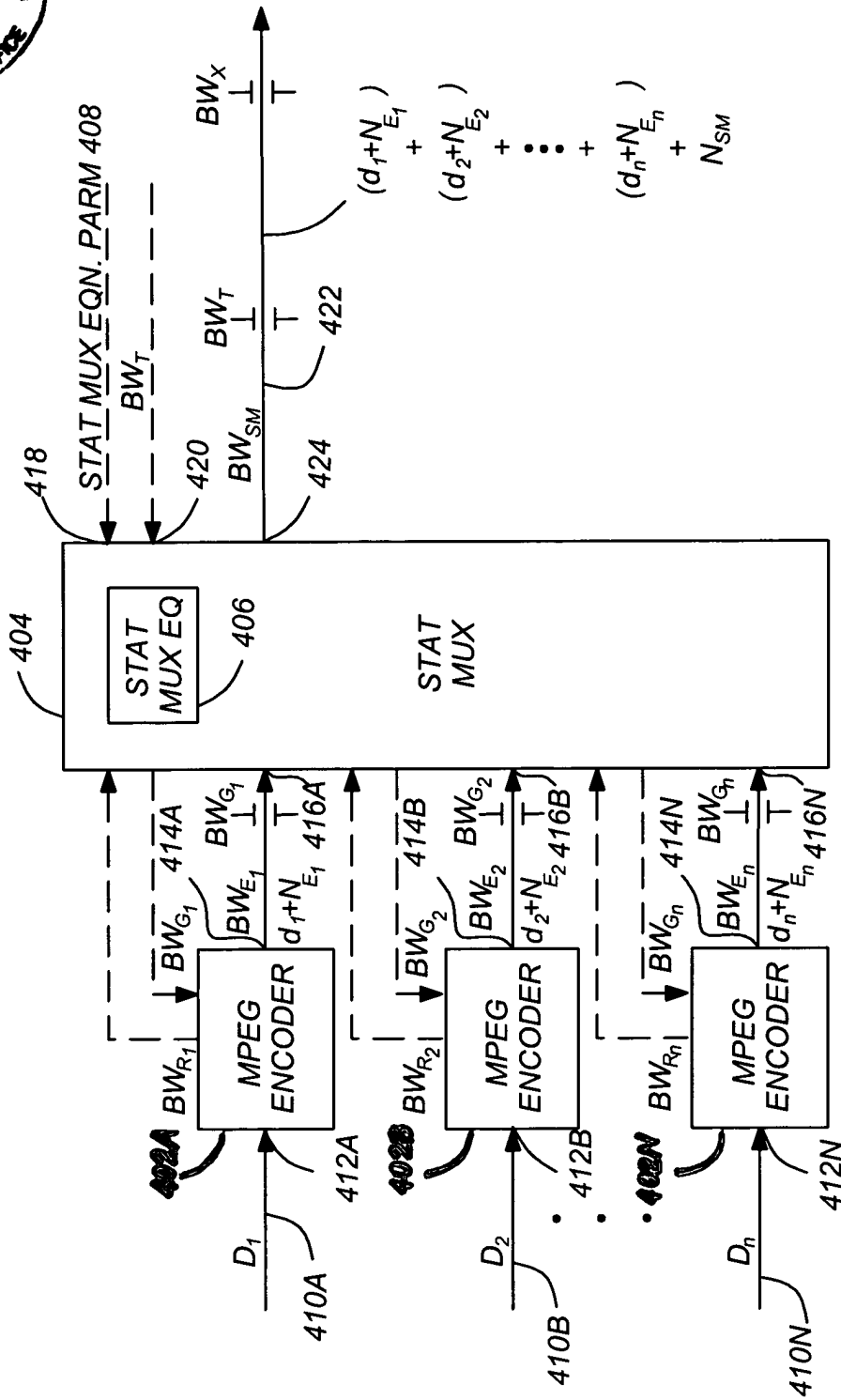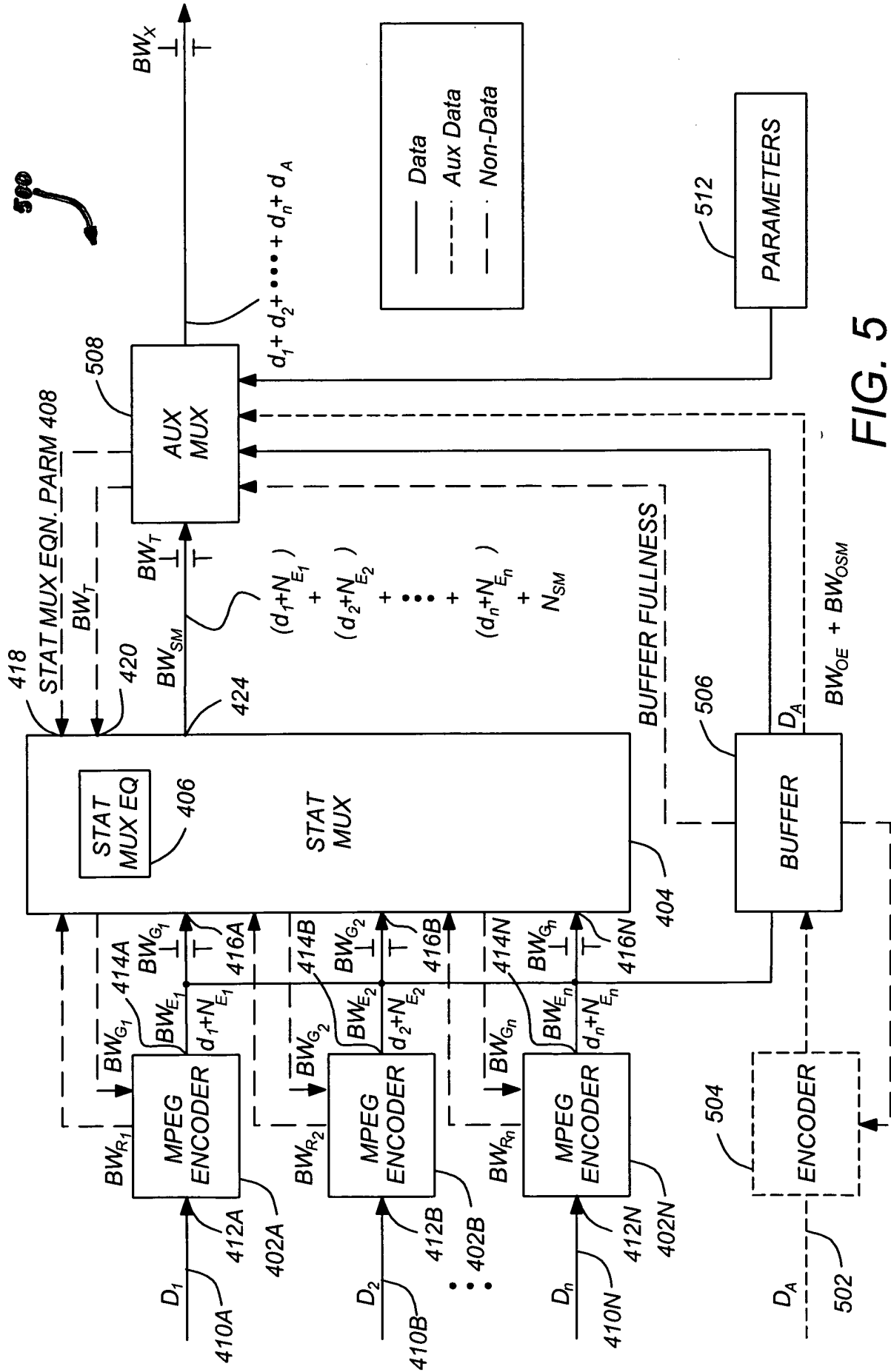
FIG. 4

ANNOTATED SHEET

FIG. 5